REMARKS

Entry of the foregoing and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

Claims 1-9 were pending. Claims 1-3 and 6-9 have been amended, claims 4-5 canceled, and claims 10-13 have been added. Thus, claims 1-3 and 6-13 remain pending and await further consideration.

Support for the foregoing amendments can be found, for example, in at least the following locations in the application: the original claims and the specification, example 2 on page 12.

NONSTATUTORY DOUBLE PATENTING REJECTION

Claims 1-8 were rejected under the judicially created doctrine of double patenting over claims 1-9 of copending Application No. 10/653,275.[1] Accompanying this response is a properly executed Terminal Disclaimer over 10/653,275. Withdrawal of the rejection is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 1-3 and 5-9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hitachi Tools JP 09-295204 (hereafter "*JP '204*") for the reasons presented at paragraph 2 of the Official Action. To anticipate a claim, the reference must teach every element of the claim. See MPEP § 2131. Here, the rejection is traversed because the cited reference does not teach every element of the claim.

[1] The Official Action at paragraph 2 references both 10/654,275 and 10/653,275. After review, it appears that 10/653,275 is correct and this response has proceeded as such.

The Examiner references the table on page 5 and examples 25 and 27 in rejecting the noted claims. However, these portions of *JP '204* do not discloses all of the features of independent claim 1, and therefore do not disclose all of the features of dependent claims 2-3 and 5-9. For example, the table on page 5 discloses TiAl. In each instance, the proportion of Al is 0.5, e.g., $Al_{0.5}$. However, claim 1 recites Al_x where x=0.55 to 0.80 and recites that S=x+y is less than 1.0 (and therefore Me_{1-x-y} is present). In another example, Examples 25 and 27 (disclosing TiAlMe forms) also disclose a proportion of Al of 0.5.

Therefore, comparing the disclosure in *JP '204* to the claims of the present application at issue here, the *JP '204* patent does not disclose the claimed Al proportion in the composite structured layer. Because the referenced portions of *JP '204* do not in fact disclose the claimed proportions of components, the Examiners conclusions regarding the inherency of the morphology of the layers is also respectfully traversed.

In light of at least these differences, Applicant respectfully submits that an anticipatory rejection is improper since *JP '204* does not disclose the invention as claimed.

Claims 1-3, 5, 6, 8 and 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,656,383 to Tanaka et al. (hereafter "*Tanaka et al.*") or U.S. Patent No. 5,981,049 to Ohara et al. (hereafter "*Ohara et al.*") for the reasons presented at paragraph 3 of the Official Action.

In regards to *Tanaka et al.*, Applicants note that this reference discloses TiAl variants. However, claim 1 recites that S=x+y is less than 1.0 (and therefore Me_{1-x-y} is present). Therefore, comparing the disclosure in *Tanaka et al.* to the claims of the present application at issue here, the *Tanaka et al.* patent does not disclose the claimed $Ti_yAl_xMe_{1-x-y})N$ layer with S=x+y is less than 1.0. Also, because the referenced portions of *Tanaka et al.* do not in fact disclose the claimed proportions of components, the Examiners conclusions regarding the inherency of the morphology of the layers is also respectfully traversed. In light of at least these differences, Applicant respectfully submits that an anticipatory rejection is improper since *Tanaka et al.* does not disclose the invention as claimed.

In regards to *Ohara et al.*, Applicants note that this reference discloses $(Ti_x,Al_y,V_z)(C_u,N_v,O_w)$ wear resistant coating films. From this disclosure, the rejection asserts that the claimed morphology would be inherent. Applicants respectfully disagree.

The present application discusses the techniques by which the hexagonal h-AlN and cubic c-$(Ti_yAl_xMe_{1-x-y})$ results. On page 8, lines 5-12, examples 1-3 and tables 1-3, it is seen that annealing at elevated temperatures produces the claimed phases.

However, the disclosure in *Ohara et al.* does not include disclosure of annealing. In examples, such as Example 1, col. 13, lines 45 et seq., *Ohara et al.* discloses depositing the materials and then allowing the temperature to cool, after which the film is produced and removed for further testing/use.

Based on at least the above, Applicants respectfully assert that the claimed properties and phases are not inherent in *Ohara et al.* because the claimed properties and phases result from techniques not disclosed in *Ohara et al.* Since inherency requires that the asserted inherent feature necessarily be so, it is respectfully asserted that this burden has not been met by reference to *Ohara et al.* because it has not been shown that the deposited film in *Ohara et al.* necessarily has the claimed properties and phases.

In light of at least these differences, Applicant respectfully submits that an anticipatory rejection is improper since *Ohara et al.* does not disclose the invention as claimed.

Claims 1-3, 4, 6, 8 and 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,103,357 to Selinder et al. (hereafter "*Selinder et al.*") U.S. Patent No. 5,503,912 to Setoyama et al. (hereafter "*Setoyama et al.*") or U.S. Patent No. 5,330,853 to Hofman et al. (hereafter "*Hofman et al.*") or U.S. Patent No. 5,272,014 to Leyendecker et al. (hereafter "*Leyendecker et al.*") or JP 11-310967 to Mitsubishi Materials (hereafter "*JP '967*") or Kim et al. High Temperature...Vapor Deposition (hereafter "*Kim et al.*") for the reasons presented at paragraph 4 of the Official Action.

In regards to *Selinder et al.*, *Setoyama et al.*, *Hofman et al.*, *JP '967* and *Kim et al.*, Applicants note that all of these reference disclose TiAl variants. However, claim 1 recites that S=x+y is less than 1.0 (and therefore Me_{1-x-y} is present). Therefore, comparing the disclosure in

each of these references to the claims of the present application at issue here, it is noted that none of *Selinder et al.*, *Setoyama et al.*, *Hofman et al.*, *JP '967* and *Kim et al.*, disclose the claimed $Ti_yAl_xMe_{1-x-y})N$ layer with S=x+y is less than 1.0.

In light of at least these differences, Applicant respectfully submits that an anticipatory rejection based on the above noted references is improper since the references do not disclose the invention as claimed.

In regard to *Leyendecker et al.*, Applicants note that this reference discloses Ti_x,Al_y,V_z where z = 12 at.% (col. 3, line 50) and Ti_x,Al_y,Zr_z where z = 20 at.% (col. 3, line 49). However, the coating in *Leyendecker et al.* has Al in a proportion of from 14.6 wt.% to 17.1 wt.% (see Fig. 1).

Comparing the disclosure in *Leyendecker et al.* to the claims of the present application at issue here, the *Leyendecker et al.* patent does not disclose the claimed Al proportion in a precipitation hardened layer. Because the referenced portions of *Leyendecker et al.* do not in fact disclose the claimed proportions of components, the Examiners conclusions regarding the inherency of the morphology of the layers is also respectfully traversed.

In light of at least these differences, Applicant respectfully submits that an anticipatory rejection is improper since *Leyendecker et al.* does not disclose the invention as claimed.

Claims 1-3, 4, 6, 8 and 9 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,565,957 to Nakamura et al. (hereafter "*Nakamura et al.*") or U.S. Patent No. 6,309,738 to Sakurai (hereafter "*Sakurai*") for the reasons presented at paragraph 5 of the Official Action.

In regard to *Nakamura et al.*, Applicants note that this reference discloses TiAlN without a Me component or, if an Me component is present, discloses TiAlMeN where the Al proportion is 40% (based on the target composition). Tables 2, 3, 7 and 8 disclose the noted compositions (see, e.g., substrates 10, 11, 12 and 13 of Table 7 and substrates 10, 11, 12 and 13 of Table 8).

Comparing the disclosure in *Nakamura et al.* to the claims of the present application at issue here, the *Nakamura et al.* patent does not disclose the claimed Me component and/or does not disclose the claimed Al proportion in the precipitation hardened layer. Because the

referenced portions of *Nakamura et al.* do not in fact disclose the claimed constituents and/or proportions of components in the layer, the Examiners conclusions regarding the inherency of the morphology of the layers is also respectfully traversed.

In light of at least these differences, Applicant respectfully submits that an anticipatory rejection is improper since *Nakamura et al.* does not disclose the invention as claimed.

In regard to *Sakurai*, Applicants note that this reference discloses $(Al_xTi_{1-x})(N_yC_{1-y})$ compositions (see col. 2, line 61).

Comparing the disclosure in *Sakurai* to the claims of the present application at issue here, the *Sakurai* patent does not disclose the claimed $(Ti_yAl_xMe_{1-x-y})N$ layer where S=x+y is less than 1.0 (and therefore Me_{1-x-y} is present). Also, because the referenced portions of *Sakurai* do not in fact disclose the claimed proportions of components, the Examiners conclusions regarding the inherency of the morphology of the layers is also respectfully traversed.

In light of at least these differences, Applicant respectfully submits that an anticipatory rejection is improper since *Sakurai* does not disclose the invention as claimed.

Claims 1-6, 8 and 9 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,824,601 to Yamamoto et al. (hereafter "*Yamamoto et al.*") for the reasons presented at paragraph 6 of the Official Action.

In regards to *Yamamoto et al.*, Applicants note that this reference discloses $(Ti_{1-a-b-c-d},Al_a,Cr_b,Si_c,B_d)(C_{1-a},N_e)$ hard films (see abstract). From this disclosure, the rejection asserts that the claimed morphology would be inherent. Applicants respectfully disagree.

The present application discusses the techniques by which the hexagonal h-AlN and cubic c-$(Ti_yAl_xMe_{1-x-y})N$ results. On page 8, lines 5-12, examples 1-3 and tables 1-3, it is seen that annealing at elevated temperatures produces the claimed phases.

However, the disclosure in *Yamamoto et al.* does not include disclosure of annealing. For example, Example 1 (col. 16, lines 25-30) and Example 3 (col. 18, lines 55-62) disclose depositing the materials for the film *Yamamoto et al.* is silent as to annealing and, instead, discusses taking the as-formed films and performing tests and/or characterizations.

Based on at least the above, Applicants respectfully assert that the claimed properties and phases are not inherent in *Yamamoto et al.* because the claimed properties and phases result from techniques not disclosed in *Yamamoto et al.* Since inherency requires that the asserted inherent feature necessarily be so, it is respectfully asserted that this burden has not been met by reference to *Yamamoto et al.* because it has not been shown that the deposited film in *Yamamoto et al.* necessarily has the claimed properties and phases.

light of at least these differences, Applicant respectfully submits that an anticipatory rejection is improper since *Yamamoto et al.* does not disclose the invention as claimed.

NEW CLAIMS

New claims 10-13 have been presented dependent from claim 7, which has been rewritten in independent form. These claims present similar material to that presented in some of original claims 1-9. Dependent claims 10-13 distinguish over the cited references for at least the same reasons as claim 7 distinguishes over the references.

CONCLUSION

In view of the above, Applicants respectfully request reconsideration and allowance of the present application. In the event that there are any questions concerning this amendment or the application in general, the Examiner is respectfully requested to telephone the undersigned so that prosecution of the application may be expedited.

Respectfully submitted,

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